

REMARKS

Applicant thanks the Examiner for the detailed Office Action dated October 4, 2005. Applicant respectfully requests reconsideration of the present application in view of the reasons that follow.

Claims 1-9, 11-19, 21-26, 28-31, 33-39 and 41-53 were pending in the application. Claim 46 is requested to be cancelled without prejudice or disclaimer. Claims 1, 3-7, 11-15, 18, 21-22, 24, 28-31, 33-34, 36, 39, 43, 45, and 51-53 are currently being amended. Claims 54-58 are being added. After amending the claims as set forth above, claims 1-9, 11-19, 21-26, 28-31, 33-39, 41-45, and 47-58 are now pending in this application.

For simplicity and clarity purposes in responding to the Office Action, Applicant's remarks are primarily focused on the rejections to the independent claims outlined in the Office Action with the understanding that the dependent claims that depend from the independent claims are patentable for at least the same reasons (and in most cases other reasons) that the independent claims are patentable. Applicant expressly reserves the right to argue the patentability of the dependent claims separately in any future proceedings.

Claim Rejections – 35 U.S.C. § 103(a)***Law of Obviousness***

35 U.S.C. § 103(a), the statutory basis for obviousness rejections, states:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The legal standards under 35 U.S.C. § 103(a) are well-settled. Obviousness under 35 U.S.C. § 103(a) involves four factual inquiries: 1) the scope and content of the prior art; 2) the differences between the claims and the prior art; 3) the level of ordinary skill in the pertinent art; and 4) secondary considerations, if any, of nonobviousness. See Graham v. John Deere Co., 383 U.S. 1 (1966).

The PTO acknowledges the standard that in order to establish a prima facie case of obviousness, the following criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the cited references must teach or suggest all the claim limitations. (See MPEP § 2143.) Furthermore, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. (See MPEP § 2141.02.)

In proceedings before the Patent and Trademark Office, the Patent Office bears the burden of establishing a prima facie case of obviousness based upon the prior art. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). “[The Patent Office] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Further, satisfying this burden requires the Patent Office to make “particular findings . . . as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.” In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). In making these findings, the Patent Office must consider each prior art reference in its entirety, including portions that would lead away from the claimed invention. W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1552, 220 USPQ 303, 312 (Fed. Cir. 1983). When a reference teaches away from the claimed invention, that teaching is strong evidence of non-obviousness. See U.S. v. Adams, 383 U.S. 39, 148 U.S.P.Q. 79 (1966); In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). Furthermore, if

the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)

The Federal Circuit has further cautioned that:

Most if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.

In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). “Close adherence to this methodology is especially important in cases where the very case with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.’” Kotzab, 217 F.3d at 1369, 55 USPQ2d at 1316 (quoting W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983)).

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990). “It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to [use] that which the inventor taught against its teacher.” In re Lee 277 F.3d at 1344, 61 USPQ2d at 1434 (quoting W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983)).

Independent Claims 1, 22, 34, and 51

On page 2 of the Office Action, independent claims 1, 22, 34, and 51 and various dependent claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,223,290 (Alden) in view of U.S. Patent No. 5,883,362 (Pettibone et al.).

Applicant respectfully submits that Alden in combination with Pettibone et al. would not result in the subject matter recited in independent claims 1, 22, 34, and 51, as amended. Each independent claim is discussed in greater detail as follows.

Claim 1: Applicant respectfully submits that neither Alden nor Pettibone et al. show a “conveyor oven” including, among other things, a “heating chamber” and a “conveyor” where “the conveyor repeatedly moves and stops the food item as the food item passes through the heating chamber,” as recited in independent claim 1. Alden describes using the belt to advance the food product into the housing where the belt is stopped while the food product is heated. After the food product is heated, the belt moves the food product out of the housing to another location where the belt stops so that the food product may be removed. Alden, col. 5, line 58 to col. 6, line 3. Thus, the belt in Alden only stops once while the food product is in the housing. Accordingly, Alden does not show “repeatedly moving and stopping the food item **as the food item passes through the heating chamber.**” Pettibone et al. also does not show a conveyor which is configured as recited in independent claim 1.

Claim 22: Applicant respectfully submits that neither Alden nor Pettibone et al. show a “conveyor oven” including, among other things, a “heating chamber” and a “conveyor belt” where “the conveyor belt travels along an endless path where a portion of the endless path is at least substantially S-shaped,” as recited in independent claim 22. The belt in Alden is shown forming a loop without an S-shaped portion. Alden, Fig. 4; col. 4, lines 35-36. Pettibone et al. also does not show a conveyor belt which is configured as recited in independent claim 22.

Claim 34: Applicant respectfully submits that neither Alden nor Pettibone et al. show a “conveyor oven” including, among other things, a “heating chamber,” a “conveyor,” and a

“receiving tray which receives the food item from the conveyor,” as recited in independent claim 34. Neither of the cited references show these elements.

Claim 51: Applicant respectfully submits that neither Alden nor Pettibone et al. show a “method for heating multiple food items” including, among other things, a “placing a first food item on a conveyor belt of a conveyor oven,” “selecting a first operating program for heating the first food item from a plurality of operating programs for heating a corresponding plurality of food items,” “moving the first food item to a stationary position in a heating chamber of the conveyor oven,” and “selecting a second operating program for heating a second food item from the plurality of operating programs, the second operating program being selected while the first food item is in the stationary position in the heating chamber,” as recited in independent claim 51.

As acknowledged in the Office Action, Alden does not disclose using any programs to heat food products. Pettibone et al., which is relied on by the Patent Office to show the use of multiple programs, does not disclose “moving the first food item to a stationary position in a heating chamber of the conveyor” and “selecting a second operating program . . . while the first food item is in the stationary position in the heating chamber.” Pettibone et al., col. 2, lines 7-55. Applicant notes that since the “lightwave oven” shown in Pettibone et al. does not include a conveyor, the above recited limitations are unlikely to be inherent to the “lightwave oven.” To the extent the Patent Office disagrees, the Patent Office must show that the missing limitations are necessarily present in Pettibone et al. See In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (“To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” (citations omitted)).

Applicant respectfully submits that the subject matter recited in independent claims 1, 22, 34, and 51 and the claims which are dependent thereon, considered as a whole, would not have

been obvious to a person of skill in the art and are patentable. Accordingly, Applicants request withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

Independent Claims 15 and 45

On page 2 of the Office Action, independent claims 15 and 45 and various dependent claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over Alden in view of Pettibone et al. In the Office Action, the Patent Office asserts that it would be obvious to combine the heating system of Pettibone et al. with the system of Alden. The motivation provided by the Patent Office for doing this is “to provide uniquely rapid and penetrating cooking, and appropriately to in [sic] a conveyor oven to meet the continuous demand in a commercial environment.”

Applicant respectfully submits that there is no motivation, teaching, or suggestion to combine the references in the manner asserted in the Office Action to provide a “conveyor oven” including a “heating chamber,” “conveyor used to move the food item to a stationary position where at least a portion of the food item is positioned in the heating chamber,” “motor,” and “heating element positioned to heat the food item in the heating chamber, the heating element being capable of being heated to an operating temperature in no more than ten seconds,” as recited in independent claim 15 or a “conveyor oven” including a “heating chamber,” “conveyor,” and a “rapidly-heating heating element positioned to heat the food item in the heating chamber, the heating element being capable of being heated to an operating temperature in no more than ten seconds,” as recited in independent claim 45. Furthermore, not only is there no motivation to combine the references, the references teach away from making the alleged combination.

For example, Alden uses “etched foil heaters” which are desirable, Alden explains, because they operate in the 3-6 micron wavelength and have a much lower watt density than quartz type heaters. Alden, col. 4, lines 37-50 (“[t]he heaters typically operate in the 3-6 micron wavelength range for optimum cooking and have a watt density of about 7-8 watts per square inch. This is a much lower watt density than quartz tube heaters that radiate in a wide

wavelength range.”); col. 6, lines 4-9. Alden continues by explaining that a wavelength of 4-5 microns is optimal for cooking when compared to wavelengths of 1-2 microns. Alden, col. 5, lines 28-47 (“[i]t has been discovered as noted above, that a cooking wavelength 4-5 microns is optimal as compared to short wavelengths in the 1-2 micron range.”); col. 2, lines 14-21 (“it has been discovered that medium wavelength infra-red radiation is vastly desirable for cooking food as compared to the short range spectrum of 1.0 to 2.5 microns”).

Pettibone et al., on the other hand, uses high wattage, quartz type heaters that emit radiation having a range of wavelengths from 0.4 microns to 4.5 microns with a peak intensity at approximately 1 micron. Pettibone et al., col. 4, lines 36-52 (“[t]he lamps are preferably quartz-halogen tungsten lamps which are capable of producing approximately 2kW of radiant power for a total radiant power of at least 4kW, and with a significant portion of the light energy in the visible and near visible light spectrum.”); col. 1, lines 45-62 (“[t]ypical quartz-halogen lamps of this type convert electrical energy into black body radiation having a range of wavelengths from 0.4 μm to 4.5 μm with a peak intensity at approximately 1 μm at an operating temperature of approximately 2898 °K.”).

Thus, the heaters from Pettibone et al., which the Patent Office alleges would be obvious to use with Alden, embody everything that Alden teaches would be undesirable in a heater - quartz type, high wattage, and emit significant radiation in 1-2 micron wavelengths. Applicant respectfully submits that, considering each reference as a whole, there is no motivation to combine them in the manner asserted by the Patent Office. To the extent the Patent Office disagrees, the Patent Office is required to make particular findings regarding why the skilled artisan, viewing each reference as a whole and with no knowledge of the claimed invention, would have combined them in the manner asserted in the Office Action to provide the subject matter of independent claims 15 and 45 despite the teachings of Alden that the type of heaters used in Pettibone et al. are inferior. See In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (holding that the Patent Office must make “particular findings . . . as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”).

Applicant respectfully submits that the subject matter recited in independent claims 15 and 45 and the claims which are dependent thereon, considered as a whole, would not have been obvious to a person of skill in the art and are patentable. Accordingly, Applicants request withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

Independent Claim 29

On page 2 of the Office Action, independent claim 29 and various dependent claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over Alden in view of Pettibone et al.

Applicant respectfully submits that there is no motivation, teaching, or suggestion to combine the references in the manner asserted in the Office Action to provide a “conveyor oven” including a “heating chamber,” and “endless conveying member . . . configured to move the food item using indexed movement,” and an “electronic control unit including a plurality of operating programs for heating a corresponding plurality of food items,” as recited in independent claim 29. The motivation provided in the Office Action for combining these references was “to provide uniquely rapid and penetrating cooking, and appropriately to in [sic] a conveyor oven to meet the continuous demand in a commercial environment.”

Applicant submits that this identified motivation is insufficient to support a prima facie case of obviousness. For example, the Patent Office has failed to identify any where the motivation can be found in either of the cited references. Further, the Patent Office has failed to identify how the use of the heating and control system from Pettibone et al. accomplishes the stated motivation when Alden makes it clear that the wavelength of the radiation used in Pettibone et al. is inferior to that used in Alden. See Alden, col. 5, lines 28-47 (“[i]t has been discovered as noted above, that a cooking wavelength 4-5 microns is optimal as compared to short wavelengths in the 1-2 micron range.”); Pettibone et al., col. 1, lines 45-62 (“[t]ypical quartz-halogen lamps of this type convert electrical energy into black body radiation having a range of wavelengths from 0.4 μm to 4.5 μm with a peak intensity at approximately 1 μm at an operating temperature of approximately 2898 °K.”).

Applicant respectfully submits that the subject matter recited in independent claim 29 and the claims which are dependent thereon, considered as a whole, would not have been obvious to a person of skill in the art and are patentable. Accordingly, Applicants request withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

Independent Claim 39

On page 2 of the Office Action, independent claim 39 and various dependent claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over Alden in view of Pettibone et al. and U.S. Patent No. 6,262,396 (Witt et al.).

Applicant respectfully submits that neither Alden nor Pettibone et al. show a “conveyor oven” including, among other things, a “heating chamber,” a “conveyor,” and a “rapidly-heating resistive ribbon heating element positioned above the conveyor in the heating chamber,” as recited in independent claim 39. Alden describes using etched foil heating elements, and Pettibone et al. describes using quartz-halogen tungsten lamps or quartz arc lamps. Alden, col. 2, lines 30-48, col. 4, lines 37-50; Pettibone et al., col. 1, lines 45-62; col. 4, lines 36-52. Neither of these references show the use of a ribbon heating element as recited in independent claim 39.

Since independent claim 39 has been amended to recite language similar to that recited in dependent claim 43, Applicant further addresses the rejection of dependent claim 43 in the Office Action. On page 2 of the Office Action, dependent claims 43 and 49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Alden in view of Pettibone et al. and further in view of either U.S. Patent No. 6,369,360 (Cook) or U.S. Patent No. 6,262,396 (Witt et al.). It is not entirely clear how Pettibone et al. is being applied to claim 43 in the Office Action. However, Applicant assumes that the Patent Office is asserting that the ribbon elements from Cook or Witt et al. are being used in conjunction with Alden.

The combination of Alden and Cook is addressed first. Depending on how the Patent Office is combining Alden and Cook either the combination does not result in the subject matter recited in independent claim 39 or there is no motivation, teaching, or suggestion to combine the

references in the manner asserted in the Office Action. For example, if the Patent Office is asserting that the lower heating element from Cook should be used to replace the lower heating element in Alden, then the combination does not result in subject matter where the “rapidly-heating resistive ribbon heating element [is] **positioned above** the conveyor in the heating chamber,” as recited in independent claim 39.

If, on the other hand, the Patent Office is asserting that the lower heating element from Cook should be used to replace the upper heating element in Alden, then the Patent Office is ignoring the explicit teaching of Cook that the lower power density of the thin nickel chromium ribbon is acceptable only as the lower heating element “because generally it will illuminate and heat a dark anodized aluminum (pizza) pan or otherwise high emissivity material.” Cook, col. 4, lines 32-45. Thus, Cook explains that quartz halogen lamps are needed as the upper heating elements in order to sufficiently brown the cheese and crust of the pizza. Cook, col. 4, lines 16-31. To the extent the Patent Office is applying this rationale, the Patent Office is required to make particular findings regarding why the skilled artisan, viewing each reference as a whole and with no knowledge of the claimed invention, would use the lower heating element from Cook as the upper heating element in Alden when Cook itself teaches the use of a different heating element for the upper heating element. See In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (holding that the Patent Office must make “particular findings . . . as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”).

Applicant notes that the motivation provided by the Patent Office for combining Cook and Alden - to enhance heater durability and lessen the internal heater space requirement - seems to have no basis in the references or common knowledge of one of skill in the art. Accordingly, this motivation is inadequate to support a prima facie case of obviousness. To the extent the Patent Office disagrees, the Patent Office is required to provide detailed findings explaining why the asserted motivation applies in this situation.

The combination of Alden and Witt et al. is now addressed. Applicant respectfully submits that there is no motivation, teaching, or suggestion to combine these references in the manner asserted by the Patent Office. In Applicant's response to the Office Action dated April 22, 2005, Applicant identified a number of reasons why one of ordinary skill would not combine Alden and Witt et al. (i.e., Alden teaches that lower wattage elements are important (see Applicant's arguments related to claims 15 and 45 above) and Witt et al. uses higher wattage elements (i.e., 1.2 kW to 2.5 kW at col. 4, line 61 to col. 5, line 3 of Witt et al.), Alden teaches that it is important that the heating element provide 4-5 micron wavelength infrared energy and it is not apparent that the heating element in Witt et al. meets this requirement, Alden teaches cooking and Witt et al. teaches finishing, etc.). In response to Applicant's arguments, the Patent Office completely ignored the first two reasons and with regard to the third stated that "although US '396 uses ribbon heaters for 'finishing,' this does not discourage their use in a conveyor oven such as that of US '290 where food finishing is needed in a commercial environment, and the control means of the US '396 oven (or US362) would accommodate the various foods to be finished." Office Action, dated October 4, 2005, page 3.

Applicant respectfully submits that the Patent Office must still make particular findings regarding why the skilled artisan, viewing each reference as a whole and with no knowledge of the claimed invention, would use the heating elements from Witt et al. in the device of Alden in light of: (1) Alden's teaching that lower wattage heating elements are important and Witt et al.'s teaching of the use of much higher wattage heating elements and (2) the need expressed by Alden of obtaining light having a wavelength of 4-5 microns when there is significant uncertainty on whether this need is met by the heating element of Witt et al. See In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (holding that the Patent Office must make "particular findings . . . as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.").

With regard to the motivation that the Patent Office did provide in the Office Action, Applicant notes that the burden on the Patent Office is not simply to conclude that use of the

ribbon heaters in Witt et al. **does not discourage** their use in the device of Alden. Rather, the Patent Office must affirmatively show **a motivation** for why one would use the ribbon heaters from Witt et al. in the device of Alden. Furthermore, Applicant respectfully submits that the motivation provided by the Patent Office seems to contemplate converting the device in Alden to a food finishing only device - something that is directly contrary to the teaching of Alden of using the device to “cook a wide variety of foods including pizza, fish products, chicken products, and bakery products” (see Alden, col. 2, lines 25-29) - or using the heating elements from Witt et al. in addition to the heating elements already provided in Alden so that the result is a complicated, expensive, and cumbersome device. If either of these two outcomes is what is contemplated by the Patent Office, then it is clear that there is no motivation to do these things for the reasons explained in the previous sentence. If these two outcomes are not what the Patent Office had in mind, the Patent Office must still make particular findings regarding why the skilled artisan, viewing each reference as a whole and with no knowledge of the claimed invention, would use the heating element from Witt et al. in the device of Alden. See In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (holding that the Patent Office must make “particular findings . . . as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”).

Applicants respectfully submit that the subject matter recited in independent claim 39 and the claims which are dependent thereon, considered as a whole, would not have been obvious to a person of skill in the art and are patentable. Accordingly, Applicants request withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

New Claims

Applicant has added new dependent claims 54-58. Applicant submits that these claims are allowable for at least the same reasons that the independent claims from which they depend are allowable.

* * *

Applicant respectfully submits that the present Application is in condition for allowance. Applicant requests reconsideration and allowance of the pending claims.

The Examiner is invited to contact the undersigned by telephone if the Examiner needs anything or if a telephone interview would advance the prosecution of the present application.

Applicant respectfully puts the Patent Office and all others on notice that all arguments, representations, and/or amendments contained herein are only applicable to the present patent application and should not be considered when evaluating any other patent or patent application including any patents or patent applications which claim priority to this patent application and/or any patents or patent applications to which priority is claimed by this patent application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1447.

Respectfully submitted,

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